

**REMARKS**

**Status of the Claims:**

Claims 1 – 25 are currently pending.

Claims 1, 2, 4 – 6, 8, 9 and 11 – 17 are currently rejected.

Claims 3, 7 and 10 are objected to.

Claims 18 – 25 are allowed.

Claims 1, 2, 4, 7 – 9, and 12 – 17 are currently amended.

Claims 26 – 61 are cancelled.

Claim 62 is a new claim.

**Amendments to the Claims:**

No new matter has been introduced by way of the claim amendments.

Claim 1 is amended to recite that the electrical probe is sensitive to an electrical property of the plurality of carbon nanotubes in a measureable way. Support for this amendment may be found in at least paragraphs [0039] and [0040].

Claim 2 and claim 4 are amended in order to have proper antecedent support from claim 1, as amended.

Claim 7 is amended to clarify that the homogeneity is property homogeneity. Support for the amendment to claim 7 may be found in at least paragraphs [0037] and [0053].

Claim 8 is amended to include a Markush group of carbon nanotube modifications. Support for this amendment may be found in at least paragraph [0032].

Claim 9 is amended to recite that the plurality of carbon nanotubes comprises a form, rather than the device further comprising a plurality of carbon nanotubes assembled in a form.

Support for this amendment may be found in at least paragraph [0050].

Claim 13 and claim 15 are amended to remove 'and combinations thereof'.

Claim 16 and claim 17 are amended to recite a plurality of carbon nanotubes in order to receive proper antecedent support from claim 1.

All other amendments to the claims not described hereinabove are purely stylistic or for clarification purposes.

#### **I. Claim Rejections Under 35 U.S.C. § 112**

Claim 8 stands rejected under 35 U.S.C. § 112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the subject matter Applicants regard as the invention. Office Action item 11. The Examiner asserts that claim 8 is incomplete for omitting essential elements. Office Action item 12. The Examiner asserts that the essential elements are the structure of the modified carbon nanotubes set forth in such a manner that it is clear what is being modified.

Applicants amend claim 8 to include a Markush group of chemical modifications to the carbon nanotubes. Applicants respectfully assert that these chemical modifications are within the understanding of one of ordinary skill in the art of carbon nanotube chemistry. Further, Applicants respectfully assert that the specification contains sufficient disclosure describing chemically-modified carbon nanotubes, such that one skilled in the art would recognize what is being modified. For example, at least paragraph [0032] includes illustrative carbon nanotube functionalizations.

Claims 13 and 15 stand rejected under 35 U.S.C. § 112, first paragraph, for non-enablement. Office Action item 14. The Examiner asserts that the claims contain subject matter which is not described in the specification in such a way to enable one skilled in the art to make or use the invention. The Examiner asserts that the specification does not describe attachment or incorporation of the device in combinations of certain members of the recited groups. For example, the Examiner asserts that the specification does not include a description of the combination of a spacecraft and a dam.

Applicants amend claims 13 and 15 to remove combinations of the recited group elements.

## **II. Claim Rejections Under 35 U.S.C. § 102(e)**

Claims 1, 2, 4 – 6, 9, 11, 12, 16 and 17 stand rejected under 35 U.S.C. § 102(e) as anticipated by United States Patent 7,220,962 (hereinafter, *Kawakatsu*). Office Action item 2. Applicants respectfully traverse the Examiner's rejection of these claims.

The Examiner asserts that *Kawakatsu* teaches a sensing element comprising a plurality of carbon nanotubes attached to an array of cantilevers having carbon nanotube sensing tips. Office Action item 3. The Examiner asserts that there is an electrical probe in contact with the probes. The Examiner asserts that the electrical probe detects light impinging on the cantilever. Office Action item 3. The Examiner asserts that *Kawakatsu* teaches a signal and network analyzer and correlating measurements to mechanical sample conditions. Office Action item 4. The Examiner asserts that claims modifying the function of the probe (claim 4) or the intended use in the preamble (claim 5) do not set forth further structure, and the claims are rejected on preceding grounds. Office Action items 5 and 6. The Examiner asserts that *Kawakatsu* teaches both single- and multi-walled carbon nanotubes. Office Action item 7. The Examiner asserts that *Kawakatsu* teaches carbon nanotubes arranged in a three-dimensional array, which encompasses a two-dimensional array. Office Action item 8. The Examiner asserts that *Kawakatsu* teaches attachment or incorporation in an article of manufacture. Office Action item 9.

Applicants amend claim 1 to recite that the electrical probe in contact with the plurality of carbon nanotubes is sensitive to an electrical property of the carbon nanotubes in a measurable way. The amendment to claim 1 confers a limiting structure to the electrical probe, making this claim patentable over *Kawakatsu*. *Kawakatsu* does not teach an electrical probe detecting an electrical property of carbon nanotubes. In contrast, *Kawakatsu* teaches a photodiode probe (which is electrical in the sense that the photodiode probe is inherently electrically powered). The photodiode probe taught by *Kawakatsu* is sensitive to and detects light (as admitted by the Examiner, Office Action item 3), which is not an electrical property as recited in Applicants' claim 1, as amended.

An anticipation rejection under 35 U.S.C. § 102 requires each claim element to be present in the cited art either expressly or inherently. M.P.E.P. § 2131, *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Since *Kawakatsu* at least does not expressly or inherently teach a probe sensitive to an electrical property of carbon nanotubes, Applicants assert patentability over this reference. Claims 2 – 17 depend either directly or indirectly from claim 1 and are patentable for at least the same reasons. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). Therefore, Applicants respectfully request that the Examiner's rejection of claims 1, 2, 4 – 6, 9, 11, 12, 16 and 17 under 35 U.S.C § 102(e) be withdrawn in view of the foregoing remarks and amendments.

### **III. New Claims**

Claim 62 is a new claim. Support for new claim 62 may be found in at least paragraph [0033].

### **IV. Allowable Subject Matter**

Claims 3, 7 and 10 contain allowable subject matter, but these claims are objected to as being dependent from a rejected base claim. Office Action items 15, 17 and 19. Applicants respectfully assert that claim 1, as presently amended, is in a condition for allowance. Therefore, the Examiner's objection to claims 3, 7 and 10 is moot. Applicants respectfully request that the Examiner's objection to claims 3, 7 and 10 be withdrawn in view of the remarks and amendments presented herein.

Claims 18 – 25 are allowed. Applicants thank the Examiner for allowance of these claims.

### **CONCLUSIONS**

Applicants respectfully submit that Claims 1 – 25 and 62 as they presently stand amended, are in a condition for allowance based on the above remarks.

If additional fees are due and are not included, the Director is hereby authorized to charge any fees or credit any overpayment to Deposit Account Number 23-2426 of Winstead PC (referencing matter 11321-P061WOUS).

If the Examiner has any questions or comments concerning this paper or the present application in general, the Examiner is invited to call the undersigned at 713-650-2782.

Respectfully submitted,

WINSTEAD PC

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